

# Clean Air-Cool Planet *Success Story*—

## International Brotherhood of Electrical Workers Local 103

*Preparing Boston electricians to lead a new energy economy*



### EXECUTIVE SUMMARY

- In 2005, the International Brotherhood of Electrical Workers' Local Chapter 103 erected the first wind turbine in the city of Boston. Adjacent to the Southeastern Expressway and within a stone's throw of public transportation hubs, the 149-foot-tall, 100kW turbine is a visible symbol of Boston's stand against global warming and a constant motivator for the city's electricians as they lead the new generation of "green collar" workers.
- Boston Mayor Tom Menino has predicted that the City of Boston will create around 2,500 "green collar" jobs in the coming years. The leadership of the IBEW plays a central role in the creation of these emerging jobs and the education and preparation of the necessary workforce.
- The turbine project was funded in part by the Massachusetts Technology Collaborative and was supported by the City of Boston, neighborhood of Dorchester, and several environmental groups. It provides 35 percent of the necessary power for the IBEW103 Training Facility, demonstrating the benefits of using renewable energy.
- As a result of the turbine's visibility and efficiency, Mayor Menino announced the city of Boston will install a small-scale wind turbine at City Hall and conduct studies on whether to install similar turbines at six local schools.

### INTRODUCTION

The plan to build the first commercial-size wind turbine within city limits of a US east coast city was conceived in 2003 by IBEW staff who felt that, while the chapter had already incorporated solar energy into its training program, there was no better time to begin training members in wind technology. Future wind energy projects would certainly create jobs for electricians; the proposed Cape Wind project, for instance, would involve installing 130 turbines in Nantucket Sound. Local 103 could provide the labor for this and other wind projects in Eastern Massachusetts, but first union members would have to be properly trained in installation and maintenance of the new technologies. The best way to teach the necessary skills would be with an on-site wind turbine.

The turbine appeared to be an attractive investment for other reasons as well. Located in Dorchester next to the Southeastern Expressway and Boston's Red Line, the IBEW facility provided a high-profile location. The proposed wind turbine would be seen each day by

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### IBEW WIND TURBINE 2008 Facts at a Glance

**2400** electrician apprentices have been trained in wind and solar technology since the turbine was finished in 2005.

**35%** of the IBEW training facility runs on wind energy.

**10s of 1000s** of commuters see the turbine each day.

tens of thousands of commuters and could serve as a symbol of IBEW103's dedication to preparing Boston's workers for a shifting energy economy. As the City of Boston's first wind turbine, the project would make a powerful statement on behalf of the city. By promoting a clean, renewable source of energy, Boston would be signaling its support for clean air, energy independence, and of course, the fight against climate change. The proposed wind turbine, which was funded in part by the Massachusetts Technology Collaborative, would also power 35 percent of the IBEW training facility with clean energy, ultimately saving the union money in an era of rising energy costs. Consequently, the wind turbine would showcase the economic and environmental benefits of wind energy for Boston.

## **REVAMPING THE IBEW TRAINING PROGRAM**

At any given time, 800 electrical apprentices are enrolled in Boston's Joint Apprenticeship and Training Committee (JATC) Training Program. The program takes five years and involves 10,000 hours of field training. The desire to supplement this already rigorous program with applied lessons in wind energy was one of the most compelling reasons behind Local 103's decision to build an onsite turbine. This application methodology had already proved itself in 2002, when Local 103 installed a 5.4kW photovoltaic (PV) array on the roof of its facility and subsequently integrated solar electricity technology into its curriculum. Every apprentice who passed through the JATC program after the integration of the solar classes received solar field training and a higher percentage subsequently found jobs installing solar panels in commercial, industrial, and residential buildings throughout Eastern Massachusetts.

Following in the footsteps of this past success, IBEW Local 103 realized that by adding a turbine, it would be able to offer a more comprehensive training program on renewable energy. Each apprentice now takes a renewable energy course that includes training on installation and maintenance of both wind and solar technologies. Furthermore, other union members who have already completed their training can also sign up for courses in the new technology.

While some JATC graduates have found jobs related to solar and wind technology already, the union anticipates that more and more renewable energy jobs will become available in the future. From 2000 to 2004, wind energy increased by 24 percent annually in the United States; the American Wind Energy Association predicts that wind could comprise 6 percent of energy in the United States by 2020; in fact, many city and state governments have passed laws limiting greenhouse gas emissions and eighteen states require the use of some renewable energy. With its applied learning and cutting edge programs, the IBEW has perfectly positioned itself and its union members to leverage their skills and lead the new green workforce.

## **RENEWABLE ENERGY: A FIXTURE IN THE BOSTON SCENARIO**

As predicted, the highly visible wind turbine has become a prominent symbol of renewable energy in Boston. Since its construction, the City of Boston and the Boston Redevelopment Authority have created a Wind Energy Zoning Provision, which governs where large wind turbines, smaller turbines, and building-integrated wind projects can be installed. In late 2008, the city was in the midst of plans to install a small-scale wind turbine at City Hall and to investigate the possibility of installing larger 250 kW turbines at four Boston public schools. IBEW electricians will install the roof-mounted turbine at City Hall as well as the public school turbines, if they are approved. Additionally, in May of 2008, the Massachusetts Port Authority installed twenty roof-mounted wind turbines at Logan Airport's Office Center with the help of the IBEW electricians.

